

Amendments to the Specification:

Please amend the two paragraphs starting on page 20, line 25, and ending on page 22, line 6 as follows:

Figure 9 depicts an embodiment of the present invention wherein the resilient insert 36 comprises a first insert contact surface 35 that forms the portion of the contact surface that is nearer to the longitudinal axis of the valve, and a second insert contact surface 70 further away from the longitudinal axis of the valve that is sloped such that the valve exit gap 38 between the second insert contact surface 70 and the valve seat member frustoconical contact surface 24 varies with the distance from the valve closure member outer perimeter 72, and is smallest at the juncture of the first insert contact surface and the second insert contact surface. The resilient insert does not extend into the valve exit gap at the point at which the resilient insert and the valve seat member frustoconical surface meet. The sloped second insert contact surface 70 allows for the reverse screening of particles through the valve exit gap 38 at the start of the plunger suction stroke, when there exists a reverse fluid flow from the discharge chamber 16 into the intake chamber 14 (chambers 14 and 16 are shown in Figure 1 and 19). Therefore the final amount of fluid passing in a reverse direction between the valve closure member contact surface 32 and the valve seat member 20 prior to the closure of the valve will be fluid that has had the particles screened out. The particle-free fluid will displace the particle-laden fluid that is located between the contact surface 32 and the contact surface 24. This will reduce the quantity of particles that are present between the contact surface 32 of the valve closure member 30 and the valve seat member 20 upon valve closure and reduce the damage to the frustoconical contacting surfaces 32 and 24 and also to the resilient insert 36. The particles to be screened out will consist of proppant particles having a generalized average diameter of about 0.01 – 0.10 inches and a likely average diameter of 0.02 – 0.07 inches. As shown in this illustration the outer valve exit gap 64 is larger than the inner valve exit gap 66. Upon reverse fluid flow, particles will be able to enter the outer valve exit gap 64 but not pass through the inner valve exit gap 66.

Therefore particles can be trapped between the insert 36 and the valve seat member 20. Particles trapped between the insert 36 and the valve seat member 20 can hold the valve open until sufficient differential pressure exists across the valve to deform the resilient insert 36 and close the valve. Before the valve closes, the fluid which flows into the region between the valve closure member contact surface 32 and the valve seat member 20 can be screened by the proppant trapped between the insert 36 and the valve seat 20. This particle-free fluid can displace particle-laden fluid from the region between the frustoconical contact surfaces 24 and 32.

Figure 10 shows an embodiment where a portion of the second insert contact surface 70 is a sloped third insert contact surface 78 which is at the outer perimeter of the resilient insert 36. This embodiment traps particles between the sloped third insert contact surface 78 and the outer perimeter of the valve seat member frustoconical contact surface 24 during reverse flow when the valve body 30 nears the valve seat 20. The trapped particles hold the valve open until sufficient differential pressure exists across the valve to deform the insert material 36 to effect a seal against the contact surface 24. When the valves closes, particles are kept away from the contact surface 32 and from the first insert contact surface 35 and that portion of the second insert contact surface 70 that is inward from the inner perimeter of the sloped third insert contact surface 78. This embodiment is preferable to the embodiment shown in Figure 9, in that a larger portion of the insert 36 is kept free of trapped proppant. Less percentage distortion of the insert material is required to effect a seal to the valve seat member contact surface 24, and there is less proppant damage to the critical interface between the valve closure member contact surface 32 and the resilient insert 36.